

CLAIMS

What is claimed is:

1 1. A method for efficiently transmitting several multimedia streams to
2 one or more multimedia receivers comprising:
3 defining a minimum acceptable time for rendering a multimedia stream to
4 a user when said user selects a particular stream;
5 defining a packet size for packets containing data for each multimedia
6 stream, said packet size defined based on one or more performance
7 characteristics of mass storage devices on said one or more multimedia
8 receivers;
9 concurrently transmitting said packets for each multimedia stream to said
10 one or more multimedia receivers;
11 continually storing said multimedia streams on said mass storage devices;
12 and
13 playing back said multimedia content from said mass storage devices
14 responsive to a user tuning to a particular multimedia stream when a delay
15 greater than said minimum acceptable time would otherwise result waiting for a
16 next packet containing data for said particular multimedia stream to arrive.

1 2. The method as in claim 1 wherein at least one of said performance
2 characteristics is the seek time capability of said mass storage devices.

1 3. The method as in claim 1 wherein said defined packet size is further
2 based a number of said packets which said multimedia receivers are capable of
3 buffering in memory before storing said packets to said mass storage devices.

1 4. The method as in claim 1 wherein relatively larger packet sizes are
2 selected for a relatively smaller number of packets capable of being buffered in
3 memory.

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1 5. The method as in claim 1 wherein said defined packet size is greater
2 than 188 bytes.

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1 6. The method as in claim 1 further comprising:
2 simulcasting said multimedia streams using packets of a second defined
3 packet size, said second defined packet size adapted to be processed by one or
4 more legacy multimedia receivers.

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1 7. A method comprising:
2 transmitting a plurality of packets of a specified size to a plurality of
3 multimedia receivers, each of said plurality of packets containing content for one
4 of a plurality of multimedia streams, wherein a delay in time between two
5 successive packets containing data for one of said multimedia streams is greater
6 than a minimum defined speed for displaying said one multimedia stream for an
7 end user.

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1 8. The method as in claim 7 further comprising:
2 playing back said one multimedia stream to a user from a mass storage
3 device on said user's multimedia receiver responsive to said user selecting said
4 stream for playback.

1 9. The method as in claim 8 further comprising:
2 selecting said specified size of said plurality of packets based on one or
3 more performance characteristics of said mass storage device.

1 10. The method as in claim 9 wherein one of said performance
2 characteristics are seek time specifications of said mass storage device.

1 11. The method as in claim 1 further comprising:
2 simulcasting said plurality of multimedia streams using packets of a
3 second defined packet size, said second defined packet size adapted to be
4 processed by one or more legacy multimedia receivers.

1 12. A method for reducing buffering requirements of a multi-stream
2 multimedia receiver:
3 for each multimedia stream, combining multimedia content contained in a
4 plurality of PID packets into a single packet of a specified size;
5 storing said multimedia content on a hard drive at said multimedia
6 receiver; and
7 playing back said multimedia content from said hard drive responsive to a
8 user tuning to a stream carrying said multimedia content when a delay greater
9 than a required channel tuning speed would otherwise result if said multimedia
10 content were not played back from said hard drive.

1 13. The method as in claim 12 wherein said single packet size is 100
2 Kbytes.

1 14. The method as in claim 12 further comprising:
2 determining said single packet size based on a bitrate at which said
3 multimedia content is transmitted.

1 15. The method as in claim 12 further comprising:
2 simulcasting one or more streams in which said multimedia content
3 contained in said plurality of PID packets is not combined into a single packet of
4 said specified size.

1 16. The method as in claim 12 wherein said predetermined period of time
2 is less than .25 seconds.

1 17. A method comprising:
2 transmitting a first plurality of channels within a first plurality of frequency
3 blocks having a first frequency range, said first frequency range being the range
4 to which a legacy group of multimedia receivers are capable of tuning; and
5 simulcasting said first plurality of channels within one or more alternate
6 frequency blocks having an alternate frequency range, said alternate frequency
7 range being the range to which an alternate group of multimedia receivers are
8 capable of tuning.

1 18. The method as in claim 17 wherein said alternate frequency range is
2 larger than said first frequency range.

1 19. The method as in claim 18 wherein said alternate frequency range is
2 30 MHz and said first frequency range is 6 MHz.

1 20. The method as in claim 17 wherein said first plurality of channels
2 transmitted in said first plurality of frequency blocks are encrypted using a first
3 encryption technique and said second plurality of channels transmitted in said
4 alternate frequency blocks are encrypted using a second encryption technique.

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1 21. The method as in claim 20 wherein said first encryption technique is
2 standard conditional access encryption and said second encryption technique is
3 DES encryption.

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1 22. The method as in claim 17 wherein said first plurality of channels
2 transmitted in said first plurality of frequency blocks are compressed using a first
3 compression technique and said second plurality of channels transmitted in said
4 alternate frequency blocks are compressed using a second compression
5 technique.

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1 23. The method as in claim 22 wherein said first compression technique
2 is MPEG-2 and said second compression technique is MPEG-4.

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1 24. The method as in claim 17 wherein said first plurality of channels are
2 transmitted in said first plurality of frequency blocks using a first PID packet size
3 and said second plurality of channels are transmitted in said alternate frequency
4 blocks using a second PID packet size.

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1 25. The method as in claim 24 wherein said first PID packet size is 188
2 bytes and said second PID packet size is 100 Kbytes.

1 26. A method comprising:

2 transmitting a plurality of packets with each packet in said plurality
3 containing data for one of a plurality of multimedia streams, wherein packets
4 containing data for at least one particular multimedia stream of said plurality are
5 separated in said transmission by an amount of time greater than a required
6 channel tuning speed at a multimedia receiver to which said plurality of packets
7 are transmitted.

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1 27. The method as in claim 26 wherein said multimedia receiver
2 comprises a buffer memory smaller than that required to concurrently buffer at
3 least one of said plurality of packets for each of said plurality of multimedia
4 streams.

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1 28. The method as in claim 27 further comprising:
2 buffering said data for said plurality of multimedia streams on a mass
3 storage device on said multimedia receiver.

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1 29. The method as in claim 28 further comprising:
2 playing back one of said multimedia streams from said hard drive
3 responsive to a user tuning to said stream when a delay greater than said
4 required channel tuning speed would otherwise result if said multimedia stream
5 were not played back from said hard drive.